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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/578,595	05/25/2006	Rainer Scharp	SCHARP-9 PCT	6941
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COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576				
EXAMINER				
AFZAL, SARANG				
ART UNIT		PAPER NUMBER		
3726				
MAIL DATE		DELIVERY MODE		
07/28/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/578,595

**Applicant(s)**

SCHARP, RAINER

**Examiner**

SARANG AFZALI

**Art Unit**

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Amendment filed 5/18/2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S5108)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's response filed on 5/18/2009 has been fully considered and made of record.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Avezou (US 4,651,631) in view of Ruhle (US 6,837,298) and Dunn (GB 2035448 A).

As applied to claim 5, Avezou (Fig. 2) teaches a method for producing a piston for an internal combustion engine, having an essentially cylindrical base body (10) made of aluminum (col. 2, line 46), whose one face forms a piston crown (top face), having pin bosses with pin bores (col. 1, lines 18-21 but not shown in figures) disposed on the underside of the base body (10), facing away from the piston crown (top surface), and having skirt elements (not shown) that connect the pin bosses with one another, wherein the base body (10) is produced using the forging method (col. 2, line 46), whereby a recess having a rectangular cross section (shown on top right hand corner of Fig. 2, but not labeled) is formed into the radially outer region of the piston crown and a ring element (11) made of aluminum and having a rectangular cross

section is given such a shape, that it fits into the recess and welded to the base body (10), and that the piston is given its final shape by means of a cutting production (i.e. machining of ring groove 14d, Fig. 2, col. 2, lines 48-49).

Avezou fails to explicitly teach the step wherein the free shanks of an essentially toroid-shaped cooling channel, which is C-shaped in cross- section and radially open to the outside, and produced from sheet steel, are welded onto a cylindrical surface of a ring insert made of NiResist, which surface lies radially on the inside, and the step wherein the ring insert provided with the cooling channel is cast into a ring element made of aluminum, using the composite casting method.

Ruhle teaches (Fig. 1, col. 1, lines 39-57) a method for producing a piston with a cooled ring carrier (1), consisting of a ring carrier part (2) and a sheet-metal part (3) wherein the free shanks of an essentially toroid-shaped cooling channel, which is C-shaped in cross- section and radially open to the outside, and produced from sheet steel, are welded onto a cylindrical surface of a ring insert made of NiResist (col. 1, lines 26-27), which surface lies radially on the inside in order to prevent defects in the ring carrier bond of cooled ring carriers (col. 1, lines 39-41).

Dunn teaches that it is well known in the piston art to provide inserts such inserts being of a different metal from that of the body of the piston for the purpose of providing resistance to operating conditions tending to produce cracking of the crown and undue wear of the piston ring grooves (specification, page 1, col. 1, lines 12-20). Dunn further teaches that a suitable composite insert can therefore be a single casting in which all

the parts are integral or in a form easily fabricated in which both castings and pressings are used (specification, page 2, col. 1, lines 35-38).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have provided Avezou with a carrier ring assembly made of a sheet steel with a C-shaped cross-section welded onto the cylindrical surface of a ring insert as taught by Ruhle in order to provide a cooling channel with effective bonding between ring and the channel part . It would have been further obvious to one of ordinary skill in the art at the time of invention to have made the ring element of Avezou by incorporating the casting method of Dunn in order to provide an integral insert element that would result in the ease of manufacturing and assembly.

### ***Response to Arguments***

4. Applicant's arguments, see Remarks, pages 1-2, filed 5/18/2009, with respect to the rejection(s) of claim(s) 1-4 under 35 USC 103 have been fully considered but are not persuasive.
5. Applicant only argues that the features of new claim 5 are not known from any of the cited references (Remarks/Arguments, paragraph bridging pages 1 & 2). Applicant further explains what each of the cited references teaches and concludes that Avezou is a relatively complicated and expensive process, Dunn has a much lower wearability and much lower wear resistance and that Ruhle does not disclose the ring insert made of NiResist. Lastly, the Applicant concludes that even combined, the cited art lack the features of new claim 5.

The Examiner respectfully disagrees with the above arguments. Note that Ruhle teaches (col. 1, lines 26-27) that it is well-known in the art for the ring carrier (ring insert) to include a NiResist material. Furthermore, the Applicant is not arguing as why the combination of the cited art is incapable of teaching the claimed invention and/or if there is an invalid motivation to combine these references.

Note that Applicant has cancelled previously presented claims 1-4 and has introduced new claim 5 which incorporates the limitation of previously presented claims 1 and 2. As such, the combination of cited art, Avezou in view of Ruhle and Dunn would still read on new claim 5.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARANG AFZALI whose telephone number is (571)272-8412. The examiner can normally be reached on 7:00-3:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on 571-272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sarang Afzali/  
Examiner, Art Unit 3726  
7/23/2009

/DAVID P. BRYANT/  
Supervisory Patent Examiner, Art Unit 3726